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DARBY & DARBY P.C. P.O. BOX 5257 NEW YORK, NY 10150-5257			ELALLAM, AHMED	
			ART UNIT	PAPER NUMBER
			2616	

DATE MAILED: 09/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/632,519

Applicant(s)

HELMY ET AL.

Examiner

AHMED ELALLAM

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 07 June 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-11 and 13-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11, 13-29 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

This is responsive to Amendment filed on 06/07/2006.

Claims 1-11, and 13-29 are pending.

#### ***Claim Objections***

1. Claims 1 and 6 is objected to because of the following informalities:

Claim 1, reference "physical layer persistent connection" is erroneous in that the specification refers to the persistent TCP connections and not persistent physical connection, the physical connection is not a persistent connection in accordance with the specification, see specification, page 8, lines 26-27.

In claim 6, the terms "capable of" in the phrase "TCP transport layer connections capable of carrying packets in parallel to another proxy" is vague and should be deleted, because it doesn't provide that the TCP connections do actually carry packets in parallel.

Appropriate correction is required.

#### ***Drawings***

2. The changes to figure 2 are not approved by the Examiner, since they introduced new matter, i.e. a memory and processor. Applicant is required to cancel the amended drawing of figure 2.

***Claim Rejections - 35 USC § 112***

3. Claims 25-29 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Applicant is required to cancel the new matter in the reply to this Office Action. The specification as originally filed doesn't disclose implicitly or explicitly the memory and the processor within the network device.

***Specification***

4. The amendment filed on 06/07/2006 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows:

**"A processor 202 and memory 204 are associated with each network accelerator 14 shown in Fig. 2. Further, each processor 202 executes data stored in a memory 204 to enable operation of each proxy application 200. "**

***Claim Rejections - 35 USC § 102***

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States

only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1, 2, 13-17, 19-22, 24, 26, 27 and 29 are rejected under 35 U.S.C. 102(e) as being anticipated by Bartlett et al, US 2003/0177396 A1.

Regarding claim 1, with reference to figures 1, 5, 6 and 7, Bartlett discloses a method for handling packet traffic in a data network comprising:

routing outgoing network layer packet traffic to a local network Performance Enhancing Proxying (PEP) peer (101 as in figure 1, and 701 as in figure 7) associated with a host 719 ( the host is the claimed selected source node) see figure 7, (claimed routing outgoing network layer packet traffic associated with a network layer connection from a selected source node to a local network accelerator associated with a node which is a source of the packet traffic network, the local accelerator running a proxy application); Bartlett also discloses intercepting the packet traffic, see [0066], and multiple TCP connections are multiplexed onto and carried by a single backbone connection (claimed physical layer "persistent" connection) to a remote PEP peer (107 as in figure 1, and 705 as in figure 7) for providing an end-to-end connections between IP host 301 and its other IP host on the other side of the backbone link, see paragraphs [0065], [0068], [0098] , [0099], and [0111] (claimed opening two or more Transmission Control Protocol (TCP) transport layer end-to-end connections over at least one "persistent" physical layer connection between the local network accelerator and at least one remote network accelerator); (Examiner, in accordance with the specification, the teaching of Bartlett of the multiple TCP connections that are multiplexed and carried by a single backbone connection to a remote PEP peer for carrying the packet traffic from

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a source host to a destination host, has as been interpreted as the claimed transmitting processed packet traffic to the at least one remote network accelerator associated with a destination node which is a destination of the packet traffic via at least one of the two or more transport layer connections). See paragraph [0129]. The remote PEP 107 reads on the claimed remote network accelerator runs another proxy application operating as a proxy for the destination node.

Regarding claim 2, Bartlett discloses that the PEPs (proxying) consist of a priority kernel 517 (unit 517, figure 5), the priority kernel is used to control the available backbone capacity for different priority levels, the kernel uses the criteria comprising source IP, source port number TCP port number, UDP port numbers, etc. See paragraph [0104]. (Claimed a proxy to proxy protocol is employed to specify at least an original transport protocol identifier, original address, and original ports of the nodes).

Regarding claim 13 as best understood, with reference to figures 1, 5, 6 and 7, Bartlett discloses a method for communicating a data stream between a source node (Host 101 in figure 1, and 719, figure 7) and a destination node (not shown in figure 3, host 713, figure 7), comprising:

Transmitting data segments (claimed data streams) from the source node to the destination node over multiple TCP connections that are multiplexed onto and carried by a single backbone connection, the multiple TCP connections being established between local network Performance Enhancing Proxying (PEP) peer (101 as in figure 1, and 701 as in figure 7) (claimed first proxy application) associated with a host 719 and a PEP (claimed second proxy application) associated with the other destination

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node, see paragraph [0066], (claimed establishing a plurality of transmission Control (TCP) transport layer connections between a first proxy application in communication with the source node and a second proxy application in communication with the second node, the first proxy application and second proxy application are over at least one physical layer connection);

Bartlett further discloses that after backbone connection is established between the PEPs (spoofers), IP host 301 initiates a TCP connection, a TCP spoofing kernel 513 of the PEP peer 101 local to the respective IP host checks its configured selective TCP spoofing rule, and If the rules indicate that the TCP connection should be spoofed, the spoofing PEP peer 101 locally responds to the IP host's TCP three-way handshake, then the spoofing PEP peer 101 sends a message across the backbone link to its peer 107 asking it to initiate a TCP three-way handshake with the other IP host on its side of the backbone link (destination node), see paragraph [0111]. (The connection between the first host and the first PEP is a client connection and the connection between the second PEP and the destination host is a TCP client connection). (Claimed enabling the first proxy application to provide the data stream from the source node over a first TCP transport layer connection, wherein the first proxy application forwards the data stream over the plurality of TCP transport layer connections to the second proxy application; and enabling the second proxy application to provide the data stream received over the plurality of TCP transport layer connections to the destination node over a second TCP transport layer connection).

Regarding claim 20, claim 20 have the same scope of claim 13, thus it is subject to similar rejections.

Regarding claim 25, claim 25 is a computer instruction stored in memory for the implementation of the method of claim 13. Bartlett discloses that his method can be implemented using computer-readable media for providing instructions to a processor for execution. See [0161].

Regarding claims 14, 21 and 26, Bartlett as indicated above with regard to parent claim 13 discloses that the spoofing PEP peer 101 locally responds to the IP host's TCP three-way handshake, and spoofing peer 107 initiating a TCP three-way handshake with the other IP host on its side of the backbone link, see [0111]. (Claimed enabling the communication of data streams to the destination node to appear to the source node as occurring directly over the first TCP transport layer connection, and enabling communication with the source node to appear to the destination node as occurring directly over the second TCP transport layer connection).

Regarding claim 15, as discussed above, Bartlett discloses that the spoofing PEP peer 101 locally responds to the IP host's TCP three-way handshake, [0111], in addition Bartlett also discloses that spoofing can be based on the source IP address, see paragraph [0093]. (Claimed enabling the first proxy application to receive the data stream for the destination node, further comprises enabling the first proxy application to spoof an address associated with the source node for the first TCP transport layer connection).



Regarding claim 16, as discussed above, Bartlett discloses spoofing peer 107 initiating a TCP three-way handshake with the other IP host on its side of the backbone link, see [0111]. In addition Bartlett discloses that spoofing can be based on the destination IP address, see paragraph [0093]. (Claimed enabling the second proxy application to provide the data stream to the destination node, further comprises enabling the second proxy application to spoof at least another address associated with the destination node for the second TCP transport layer connection).

Regarding claims 17, 22 and 27, Bartlett discloses a router module (505, figure 5) for receiving incoming packet from a source node (example: host 301, fig. 3) (claimed if the destination node is remote from the source node), and a TCP spoofing kernel 513 that locally acknowledge data segments (packets) received from host (301), (claimed socket interface), see paragraph [0098]. (Claimed if the destination node is remote to the source node, providing the data stream to the first proxy application over a socket interface).

Regarding claims 19, 24 and 29, Bartlett discloses multiple TCP connections are multiplexed onto and carried by a single backbone connection, which is a connection between PEPs. Bartlett implicitly discloses communicating data streams over a plurality of PEP connection, because that is needed for other host I the system to simultaneously use the backbone. (Claimed communicating the data stream over a plurality of physical layer connections, wherein at least a portion of the plurality of TCP transport layer connections are provided over each of the plurality of physical layer connections).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 3-5, 18, 23 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bartlett in view of Dillon et al, US 6,658,463).

Regarding claims 3-4,18, 23 and 28 Bartlett while discloses using a compression kernel at each PEP (Performance Enhancing Proxying peer), see paragraph [0011], it doesn't specify that the compression is a dictionary based compression algorithm (as in claim 3) and the coding is a Huffman coding (as in claim 4).

However, Dillon discloses in the same field of endeavor, using a dictionary based compression algorithm for decoding data before transmission (as in claims 3, 18,23 and 28) and the coding is a Huffman coding (as in claim 4). See column 14, lines 56-67 and column 15 –column 16, lines 57. It would have been obvious to an ordinary person of skill in the art, at the time the invention was made to implement the dictionary based compression algorithm using Huffman coding as taught by Dillon as the compression kernel of Bartlett so that less computational resources can be used (column 15, line15-22). The advantage in Bartlett's system would have efficient use of the available bandwidth due to the composite benefit of compressing data with a minimized computational time.

Regarding claim 5, Bartlett does not disclose a dictionary associated with an existing end-to-end connection is utilized to service a new connection request.

However, Dillon discloses that a dictionary is used to provide high compression should data similar to earlier previously transferred data be submitted for compression. See column 15, lines 35-48. (Claimed a dictionary associated with an existing end-to-end connection is utilized to service a new connection request).

Therefore, it would have been obvious to an ordinary person of skill in the art, at the time the invention was made to use Dillon's end-to-end associated dictionaries in establishing Bartlett new connection so that prior to transmission of data, compression would be much faster if the data is similar in content to other data previously transmitted. (Dillon, column 15, lines 40-48). The advantage in Bartlett's system would be efficient use of the available bandwidth due to the composite benefit of high compression of data due to a minimized computational time, and the efficient use of the available backbone capacity due to the compression benefit.

7. Claims 6-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bartlett in view of McCanne et al, US 20040215746. Hereinafter referred to as McCanne.

Regarding claim 6, with reference to figure 5, Bartlett discloses a PEP (Performance Enhancing Proxying) device (claimed data network routing device) comprising:

Router module 505 connected to receive incoming packet from a source node (example: host 301, fig. 3); Bartlett discloses that the packet are IP packet that are routed in accordance with respective IP addresses, See paragraph [0144]; (Examiner interpreted the IP routing of Burnett, using the routing module 505, as the claimed router examining the incoming packets to determine if they are addressed to a destination which is not local to the router);

A TCP spoofing kernel 513 that locally acknowledge data segments (packets) received from host (301), (claimed socket interface), see paragraph [0098]; Backbone protocol kernel 515 in combination with data compression Kernel 521 (claimed proxy application), the Backbone protocol kernel 515 is used for the multiplexing of multiple TCP connections (claimed multiple transport layer connections) carried onto a single backbone connection (claimed at least one physical layer connection), see paragraph [0099], wherein end-to-end connections between IP host 301 and its other IP host on the other side of the backbone link are provided, see paragraphs [0065], [0068], [0098] , and [0111] . (Claimed a proxy application, connected to receive incoming traffic from the socket interface, the proxy application associated with the router (module), and the proxy application, acting as a proxy for the source node, and establishing multiple TCP transport layer end-to-end connections on behalf of the source node over at least one physical connection).

In addition any remote PEP of Bartlett reads on the claimed remote network accelerator runs another proxy application operating as a proxy for the destination node.

Bartlett doesn't specify the TCP connections between the PEPs are carrying packets in parallel over multiple transport layer connections. See paragraph [0106].

However, McCanne discloses a having data from a single client-server connection stripped across multiple TCP connection and carried in parallel.

Therefore, it would have been obvious to an ordinary person of skill in the art, at the time the invention was made to modify the TCP multiplexing of Bartlett over the backbone connection between the PEPs in the manner taught by McCanne so to provide increased throughput in the system of Bartlett compared to using a single TCP multiplexed connection (McCanne [0106]).

Regarding claim 7, Bartlett discloses that the PEP 101 and its peer PEP 107 of figure 6, wherein PEP 101 receives packets from a remote host, see paragraph [0122]. (Examiner interpreted the identical PEPs (figure 6) interfacing each LAN as having the characteristic of transmitting and receiving traffic across the backbone connection as being the "claimed proxy application additionally receives packets from a network connection addressed to a destination node which is local to the router").

Regarding claim 8, Bartlett further discloses having data compression Kernel 521 for compressing data prior to transmission across the backbone link [0101], (Examiner notes that by way of symmetry, compressed data when received by the PEP, it must be decompressed so it can be delivered to the destination host). (Claimed packets are compressed by the proxy application, and additionally comprising a data decompressor, for decompressing received packet, and the router forwards decompressed packets to the destination node).

Regarding claim 9, Bartlett discloses that data from a sending host is transmitted over multiple TCP connections that are multiplexed onto a backbone connection between peers PEPs 101 and 107. See paragraph [0111]. (Claimed at least one TCP transport layer sessions are carried over a persistent connection established with another data network routing device having a proxy application running thereon), (Examiner interpreted the PEP 107 as the claimed “another data network routing device having a proxy application thereon”, since it has similar components and provides functionalities similar to that of PEP 101).

Regarding claim 10, Bartlett discloses establishing a backbone connection between the two proxying devices (PEP, each proxying device has a proxy application, as indicated above with reference to claim 9, each using a spoofing kernel. See paragraph [0111]. (Claimed a proxy-to-proxy protocol is used to pass original source node and destination node information).

Regarding claim 11, Bartlett discloses a priority Kernel 517 within the PEP 101 (proxying peer) for controlling the available backbone capacity for different priority levels, the kernel 517 uses the criteria comprising source IP, source port number TCP port number, UDP port numbers, etc.. See paragraph [0104]. (Claimed a proxy-to-proxy protocol specifies an original type for the packets).

### ***Response to Arguments***

8. Applicant's arguments filed January 12/15/2005 have been fully considered but they are not persuasive:

**35 USC § 112**

The rejections of claims 13-19 under 35 U.S.C. 112, second paragraph have been withdrawn in view of the amendment.

The rejections of claims 18, and 23 under 35 U.S.C. 112, first paragraph have been withdrawn in view of the amendment.

**Claim 1:**

Applicants argue “the backbone connection in Bartlett is a “protocol connecting a pair of PEP peers” (paragraph [0066], lines 7-8). *This protocol can be a transport layer protocol used **instead** of TCP. For example, paragraph [0067] discloses that this protocol can be a protocol that resembles TCP*. Further, the presence of the VPN 1305b and LAN driver 1307 in host 301 in Fig. 13 indicates that the backbone connection is encapsulated further before it is transmitted. It therefore must exist in a layer above the physical layer of the OSI model.” Emphasis added.

Examiner respectfully disagrees, the passages relied upon of Bartlett of the presence of the VPN and LAN driver deals with a different embodiment than the one provided in the rejection. Also Applicants mischaracterized Bartlett’s indication of the “*transport layer protocol used **instead** of TCP*”. Bartlett discloses having multiplexed TCP connections between the PEP peers, and thus having plurality of multiplexed TCP connection suggest the opening of the plurality of these TCP connections prior to multiplexing. Since claim 1 requires only one connection for carrying traffic between the proxies as provided by the claimed feature of “at least one TCP connection”, any one of

the multiplexed TCP connections of Bartlett does read on the claimed "at least one TCP connection".

Similarly Examiner believes contrary to Applicants assertion, the Multiplexed TCP connection over the backbone "physical link" provide for the claimed two or more TCP connections.

Claim 6:

The argument with regard to claim 6 is moot in view of new ground of rejection.

Claim 13:

Applicants argue *"the subject matter of amended Claim 13 is not anticipated or suggested by Bartlett for at least substantially similar reasons as discussed for amended Claims 1 and 6. As amended Claim 13 teaches opening a plurality of Transmission Control Protocol (TCP) transport layer connections between first and second proxy applications that are also in communication over separate TCP client connections with a source node and destination node respectively. As discussed above, Bartlett does not disclose that its backbone connection includes a TCP connection, let alone a plurality of TCP connections which are separate from TCP client connections between the proxy applications and the respective source and destination nodes"*.

Emphasis added.

Examiner respectfully disagrees, the multiplexed TCP connection over the physical backbone link provide for the plurality of opened TCP connections, and the connection between the first host and the first PEP is a TCP client connection as, and



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the connection between the second PEP and the destination host is a TCP client connection indicated by the TCP spoofing of the respective PEPs.

Claim 20 and 25:

Claims 20 and 25 have the same scope of claim 13 thus it is subject to similar argument.

Dependent claims:

3-5, 18, 23 and 28>Applicant argues that these claims depend from allowable respective claims thus they are allowable. Examiner respectfully disagrees. These claims are rejected on art as indicated above.

### ***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: see form PTO-982.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to AHMED ELALLAM whose telephone number is (571) 272-3097. The examiner can normally be reached on 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, To Doris can be reached on (571) 272-7629. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

A.E  
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Drawing not approved  
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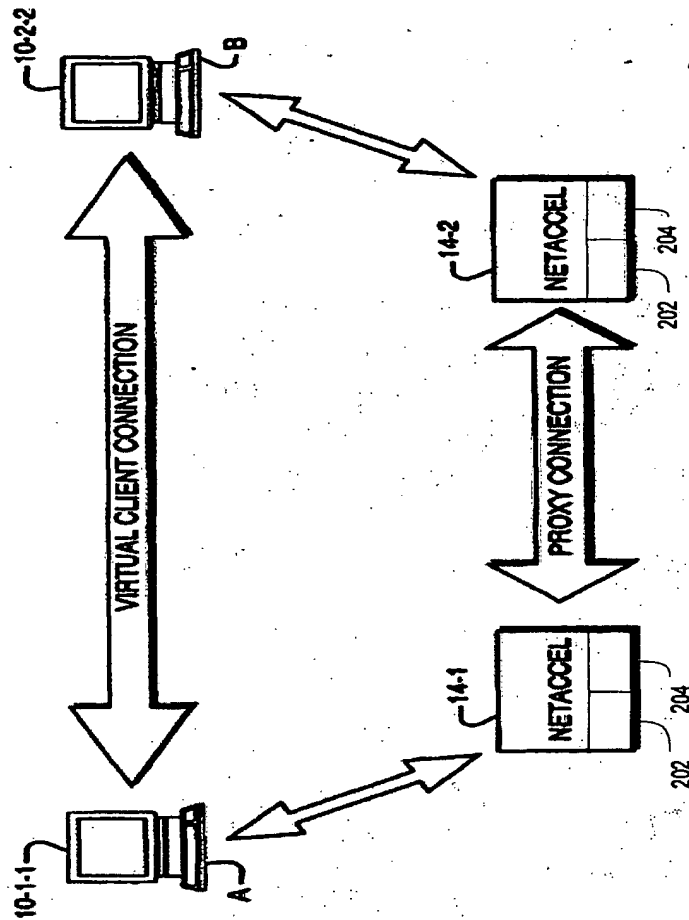


FIG. 2